
Statement of Purpose and Need

US 36 Corridor/NEPA Study

Prepared for

Indiana Department of Transportation

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1.0 Summary of Study Purpose and Need



U.S. 36 looking west at Courthouse Square

U.S. 36 is currently classified by the Indiana Department of Transportation (INDOT) as an urban principal arterial as it runs east-west from the Hendricks/Marion County line through the Town of Danville, Indiana. To the west of Danville, its classification changes to rural minor arterial.

The INDOT Long Range Plan categorizes highways and corridors in a different manner for statewide planning purposes.

1. **Statewide Mobility Corridors**

These corridors are the top-end of the highway system and are meant to provide mobility across the state. They provide safe, free-flowing, high-speed connections between the metropolitan areas of the state and surrounding states. They serve as the freight arteries of the state and are thus vital for economic development. INDOT has as a strategic goal to directly connect metropolitan areas of 25,000 population or greater. See Figure 6-1.

2. **Regional Corridors**

These corridors are the middle tier of the highway system and are meant to provide mobility across the state. They provide safe, high-speed connections.

3. **Local Access Corridors**

These corridors make up the remainder of highway system. They are the bottom level of system and are used for lower speed travel, and provide access between locations of short distances (10-15 miles).

The INDOT Long Range Plan classifies U.S. 36 as a Regional Mobility Corridor. Other routes, such as, U.S. 31, are classified as Statewide Mobility Corridors.

The segment of U.S. 36 between I-465 in Indianapolis/Marion County and the east edge of Danville has two travel lanes in each direction separated by a median where left turn lanes are provided at critical locations.

The segment through Danville consists of one lane in each direction with left turn lanes at some intersections. This segment passes through the historic business district and residential neighborhoods.

The segment west of Danville is one lane in each direction passing through areas that are mostly rural in character.

License plate surveys have determined that approximately 10,570 trips per day pass entirely through the Town, representing about 36% of the daily trips at the east edge of Town and 74% at the west edge.

The narrowing of U.S. 36 through the Town center causes congestion at its choke points. The merging of vehicles from two lanes into one can cause long back-ups in the peak hours, especially at the east edge of Town. In addition, the truck traffic associated with the highway is not compatible with the character of the business district and neighborhoods of the Town.

Furthermore, U.S. 36 provides the only major crossing of White Lick Creek near the center of Danville. The lack of alternative parallel routes contributes to congestion and hinders the response times of emergency vehicles.

Figure 1 shows the U.S. 36 Corridor/NEPA study area and its major roadways. Approximately 6 miles of U.S. 36 lie within the study area. Other major highways in the Study Area include S.R.236 and S.R.39. S.R.236 enters the Study Area from the northwest and terminates at S.R.39 north of Danville. S.R.39 passes through the Study Area in a north-south direction, traveling over U.S. 36 for about 0.4 miles near the downtown area.



U.S. 36 looking west with Ellis
Park on the right

INDOT has requested the completion of a Corridor/NEPA Study along U.S. 36 through Danville, Indiana in order to assess the implications of limited east-west capacity in the study area and to identify possible improvement alternatives. Based on the purpose and need discussed in the following sections of this report, the following Core Objectives were developed for the proposed action:

- Provide additional system capacity to accommodate the traffic demands of projected (20 year) development patterns at Levels of Service C in the rural areas and D through the Town.
- Provide additional system flexibility (redundancy), and divert at least half of the through trips.

A range of preliminary alternatives will be subjected to the previously described evaluation criteria:

- Do nothing
- Traffic Operational Improvements
- Northern Bypass
- Southern Bypass
- Railroad Corridor.

Figure 1 illustrates the location of the study area in the State, region and county.

2.0 Project History and Background



U.S. 36 looking west toward bridge over
White Lick Creek

U.S. 36 extends across the entire State of Indiana between Ohio and Illinois.

The eastern segment of U.S. 36 between Ohio and Indianapolis/Marion County passes through Randolph, Henry, Madison, and Hancock Counties. It is routed through Indianapolis/Marion County along I-465. The western segment between Indianapolis/Marion County and Illinois passes through Hendricks, Putnam, Parke and Vermillion Counties.

The segment of U.S. 36 in Hendricks County passes through the Town of Avon, in the eastern part of the county, and the Town of Danville, the county seat, in the center of the county. This segment is classified as an urban principal arterial.

The eastern part of Hendricks County, including the Town of Avon, is a part of the Indianapolis Metropolitan Planning Organization (MPO). The balance of the county is beyond the limits of the MPO.

Hendricks County has increased from approximately 69,800 persons in 1980 to approximately 104,100 persons in 2000, according to U.S. Census statistics. The pace of development has quickened since 2000 according to local planning officials. Most of the development in Hendricks County has been occurring in the easternmost four townships and in Center Township in and near Danville. The development

has radiated outward from Indianapolis along transportation corridors including I-70, I-74, and US 36.

Traffic volumes along the US 36 corridor have increased as a result of development. In response, INDOT has widened the roadway between I-465 in Indianapolis/Marion County and the east edge of Danville. The widened section has two travel lanes in each direction separated by a median where left turns have been provided at major intersections and driveways.



South side of Courthouse Square

The segment of US 36 through Danville consists of one lane in each direction with left turn lanes at some intersections. Sidewalks are provided along each side of the street through the central business district, the site of the historic Courthouse Square. Commercial buildings in the central business district abut the right-of-way. Residential neighborhoods with homes facing the street exist along other segments of US 36 through the Town.

US 36 west of Danville is one lane in each direction passing through areas that are mostly rural in character.

The constricted width of US 36 through Danville causes congestion, particularly during the morning and evening peak hours. Furthermore, increasing volumes of heavy truck traffic through the central business district past the historic Courthouse Square is not compatible with the pedestrian activities and storefront businesses along the route.

The Town of Danville completed a Traffic Operations Study in 1996. That Study concluded that there are “no reasonable alternatives along existing routes” and that a bypass corridor feasibility study be conducted.

The Town of Danville adopted its current Comprehensive Plan in 1998. That plan again called for a study to determine the feasibility of constructing a U.S. 36 bypass either north or south of Town.



Typical residential street parallel to U.S. 36

Therefore, this Corridor/NEPA Study has been undertaken by INDOT to assess the implications of improving east-west mobility through Danville and Center Township and to identify feasible alternatives. Based on the following sections of this report, the Core Objectives of this project include the following:

- Reduce vehicular congestion and delays in Danville;
- Provide additional system capacity to accommodate the traffic demands of projected (20 year) development patterns
- Provide additional system flexibility (redundancy) to decrease congestion and improve accessibility

This Study will also be coordinated with a concurrent INDOT study of S.R. 39 to improve its north-south alignment through this Study Area. Currently, S.R. 39 is routed through Danville. It passes through residential areas, and along the

west edge of the business districts. It crosses the CSX Railroad on a sub-standard bridge. South of the CSX Railroad the S.R. 39 alignment is sub-standard. Alternatives for improving S.R. 39, including realignments, will be coordinated with this study.

3.0 Supporting Narrative and Technical Documentations

3.1 Existing Traffic Volumes and Levels of Service

Figure 2 shows the current daily traffic volumes on the major roadways within the study area. During the morning peak hours, traffic is heaviest in the eastbound direction because of commuters going to work places in eastern Hendricks County and in Indianapolis/Marion County. Westbound traffic is heaviest during the afternoon peak hours when workers return home. Peak hour levels of service (LOS) were computed using Highway Capacity Software (HCS). The HCS was used to produce Level of Service (LOS) ratings for each traffic movement or combined traffic movement (if a lane is shared).¹ These LOS ratings are measured in terms of average control delay, where delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. The term “control” refers to the inclusion of deceleration delay, queue move-up time, stopped delay, and acceleration delay in the final delay measure. LOS A is the best operating condition, and LOS F has the longest delays, therefore being the worst operating condition. LOS ratings of D or better during the peak hours are acceptable in most municipal settings.

³ The Highway Capacity Software (HCS) program is associated with the latest release of the Highway Capacity Manual (HCM) as published by the Transportation Research Board.

Table1 provides the LOS criteria for signalized intersections. Table 2 provides the LOS criteria for unsignalized intersections. Table 3 and Figure 3 show the LOS at critical intersections along U.S. 36 in the Study Area.

Table 1
Level of Service Criteria for Signalized Intersections

Level Of Service	Control Delay per Vehicle (seconds)
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

Table 2
Level of Service Criteria for Unsignalized Intersections

Level Of Service	Stopped Delay per Vehicle (seconds)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Table 3
Existing Peak Hour Levels of Service

Intersection	AM Peak	PM Peak
U.S. 36 and Old U.S. 36	B	C
U.S. 36 and S.R. 39 (south leg)*	E	E
U.S. 36 and Tennessee Street	B	B
U.S. 36 and Washington Street	B	B
U.S. 36 and S.R. 39 (north leg)	C	C

Note: at two-way stop controlled intersections, no overall intersection LOS is reported. The LOS presented in Table 3 represents the lowest LOS calculated for any one movement.

3.2 Through Trips

Trips passing through the Town of Danville are estimated to consist of about 74% of the total traffic at the west edge of Danville, based on vehicle license plate surveys conducted as a part of this Study.

The surveys were conducted during the morning and evening peak hours when traffic volumes are the heaviest. During the morning peak hours (6:30 a.m. to 8:30 a.m.), observers recorded license plate characters of vehicles entering Danville from the west, north and south, and leaving Danville to the east. The survey procedure was reversed during the evening peak hours (4:00 p.m. to 6:00 p.m.).

The recorded vehicle license plate characters were processed through a computer program that determined the number of inbound plates that were matched with outbound plates at another station. The matching process accounted for the amount of

time that is necessary to pass through the survey area. Thus, matches of inbound plates were matched within a subsequent 10 minute time period. Matches found beyond that 10 minute interval were not categorized as through because of having made an intermediate stop. Figure 4 indicates the results of those surveys.



Typical residential street parallel to U.S. 36



Typical Residence in Danville

During the AM peak two hours, 1772 vehicles left Danville toward the east. Of those, about 30% were categorized as through trips because of matched license plates. About 70% of the trips, therefore, originated from areas within Danville.

During the PM peak two hours, 2095 vehicles entered Danville from the east. Of these, about 62% were categorized as through trips because of matched license plates. About 38% of the trips, therefore, were destined to areas within Danville.

The greatest percentage, and absolute number, of through trips traveled along the entire length of U.S. 36 between the east and west edges of the Town. During the four peak hours, about 36% of the vehicles entering or leaving at the east edge of the Town passed entirely through it along U.S. 36:

$$\frac{341 + 1059}{1772 + 2095} = 36.2\%$$

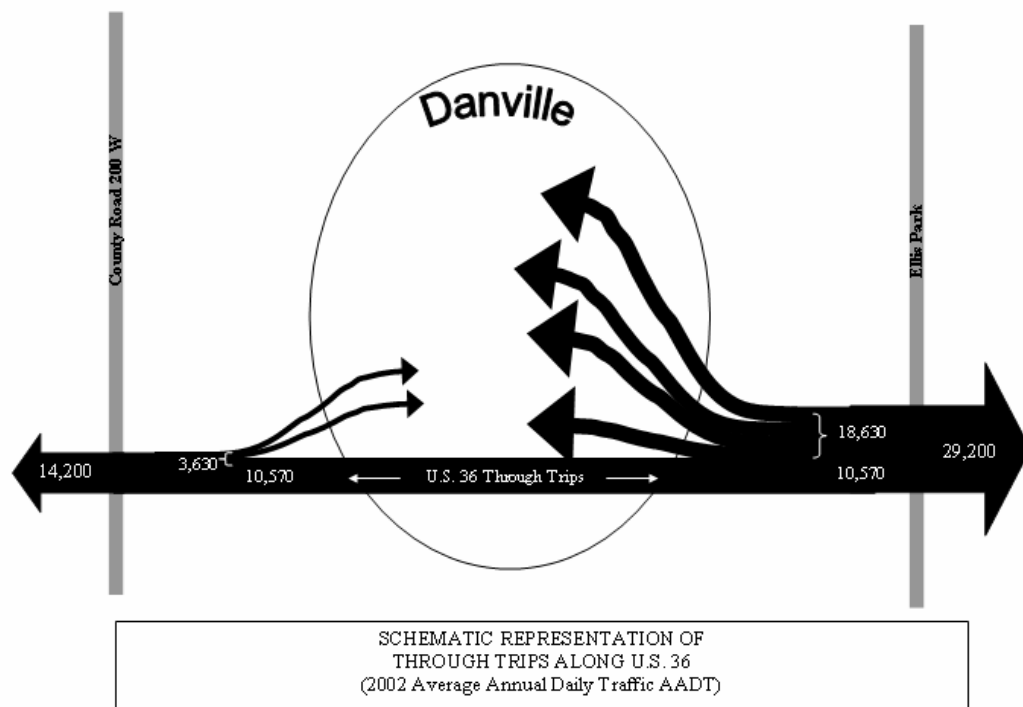
The average daily traffic is 29,200 at the east edge of Town, and 14,200 at the west edge of Town. On a daily basis, then about 10,570 trips pass entirely through the Town.

$$0.362 \times 29,200 = 10,570 \text{ through trips/day.}$$

This represents about 74% of the U.S. 36 traffic at the west edge of Town.

$$\frac{10,570 \text{ through trips / day}}{14,200 \text{ total trips / day}} = 74.4\% \text{ through trips}$$

The following schematic diagram illustrates the estimate of daily trips along U.S. 36 through Danville.



3.3 Existing Land Use Map and Locally Adopted Land Use Plan

The Town of Danville adopted its current Comprehensive Plan in 1998. Figure 5 shows the Future Land Use Plan of the Town.

The Town exercises its planning and zoning authority within the corporate boundaries. Its planning and zoning authority is extended as new areas are annexed to the Town. The Comprehensive Plan anticipates new residential development to mostly occur to the north, northeast, and northwest of the Town due to the constraints imposed by the CSX Railroad, the landfill, and the airport to the south of Town. Specific goals of the plan are:

- Preserve Danville's small town and rural character.
- Promote efficient land use patterns that discourage sprawl.
- Discourage development in areas where it would lead to additional traffic congestion.
- Preserve attractive visual corridors and areas of open space within new development in order to maintain the look of a small Town.



White Lick Creek

The current Hendricks County Comprehensive Plan was adopted in 1998, followed by a new zoning ordinance in 2001. The County exercises its

planning and zoning authority for all areas of the County that are outside the corporate limits of Towns that have their own planning and zoning regulations. The County Plan includes policies that encourage new development to occur in the eastern portions of the County where urban services and utilities can be provided; and, for agricultural activities to be protected and preserved in the western portions of the county. The County Land Use Plan is shown on Figure 6.

Both the Town and County Plans recognize the environmentally sensitive White Lick Creek (east and west branches) and their value as scenic and recreational corridors to be protected from the adverse impacts of development.

3.4 Projected 2025 Traffic Volumes and Levels of Service

Traffic volumes were projected for this study by the Indiana Department of Transportation (INDOT) using the Statewide Travel Simulation Model. INDOT reports that:

“In terms of overall traffic assignments the statewide model produced results that reflect the rapid growth anticipated in central Indiana, close to the Indianapolis metropolitan area. The statewide model is a macro level analysis tool. The overall results appear reasonable relative to the size of the traffic analysis zones and the limited amount of network, representing the “real” roadway system. The overall increase in future year traffic seems to



White Lick Creek

lean towards the high side in comparing the base year and future year assignments. Population, households and employment are estimated to increase by 75% to 85% in the study area. Overall traffic on all roadways connecting to Danville show traffic increasing at an overall 100% over the 25 year future forecast.”

The doubling of traffic volumes cannot be accommodated by the current street system without excessive delays and congestion.

3.5 Traffic Safety Data and Accident Data

Traffic accident records were obtained for the most recent years available (1997, 1998 and 1999).

Conflict diagrams were constructed based upon the information provided in these reports. The following patterns were identified at key signalized intersections within the study area:

- At U.S. 36 and Old U.S. 36 (Main Street), a number of rear-end accidents are occurring, some with injury. A significant number of accidents occurred between northbound left-turning vehicles and westbound through vehicles as well.
- At U.S. 36 and S.R. 39, a high number of rear-end accidents are occurring in both the eastbound and westbound through directions, some with injuries. The accident records did not indicate at which of the two intersections of U.S. 36 and S.R. 39 each incident occurred.



U.S. 36 looking west from Old U.S. 36

- No significant patterns were observed for accidents at U.S. 36 and Tennessee Street or U.S. 36 and Washington Street.

Statewide crash data was obtained from INDOT and compared to crash data along U.S. 36 during 1997, 1998 and 1999. Table 4 provides a summary of this comparison. Total accident and injury rates for the U.S. 36 corridor are lower than statewide rates along other urban principal arterials. The fatality rate was higher in 1998 than the statewide average.

The 1998 fatality occurred 25 feet east of the intersection of U.S. 36 and Suburban Drive. Suburban Drive intersects U.S. 36 on the near west side of downtown Danville. In addition to the fatality, three persons were injured. Records indicate a head-on collision between one eastbound vehicle and a westbound vehicle. The westbound vehicle was traveling left of the centerline. The crash occurred at 7:19pm on a weekday.

Neither the collision diagrams nor the accident rates suggest that neither this segment of U.S. 36 nor any of its intersections are particularly hazardous. Accident, injury and fatality rates have all been well below statewide averages in recent years.

Table 4.
Comparison of Crash Rates* for Urban Principal Arterials

	Year	Annual VMT (Millions)	Total Accidents	No. Injuries	No. Fatalities	Accident Rate	Injury Rate	Fatality Rate
Along US 36, Hendricks County (within Study Area)								
	1997	116.76	150	60	1	128.47	51.39	0.00
	1998	116.76	144	48	1	123.33	41.11	0.86
	1999	116.76	116	46	0	99.35	39.40	0.00
Statewide								
	1997	11,035	40,411	9,994	34	366.21	90.57	0.31
	1998	10,666	42,884	10,837	65	402.06	101.60	0.61
	1999	10,291	45,819	10,943	93	445.23	106.34	0.90

Source: Accident records and summary statistics provided by INDOT Program Development Division – Congestion and Safety Management

* Crash rates are expressed as incidents per Annual Vehicle Miles of Travel (VMT)

3.6 System Efficiency, Connectivity and Geometric Considerations



Hendricks County Courthouse

The Town of Danville became the seat of Hendricks County in 1824. The original Town was platted with a grid system of narrow streets extending outward from the Courthouse Square along relatively flat land west of the valley of White Lick Creek (West Fork). Figure 7 shows the street and road system.

The Old North Salem Road and the Cartersburg Road (Blake St.) extended outwardly from the grid toward the northwest and southeast, respectively. Broadway connected with Twin Bridges Road which then crossed the Creek, but the bridge has subsequently been abandoned. Columbia Street was eventually extended across the Creek to connect through a series of sharp curves with CR 50 N.



Twin Bridges

Main Street (U.S. 36) was extended down to the valley floor and across the Creek. Today, Main Street (U.S. 36) is the only street that provides east/west connectivity through the Town.

S.R. 39 enters the Town from the north along Urban Street and from the south along S. Cross Street. S.R. 39 “travels over” six blocks of Main Street (U.S. 36) between Urban and Cross Streets. (INDOT) has separately studied the possibility of rerouting S.R. 39 along Mackey Road to provide better north/south connectivity.

CSX Railroad tracks run east/west through the Study Area along the south edge of Danville.

There are four roadway grade separated crossings of the railroad:

- Twin Bridges Road...narrow rural road that passes beneath the open spandrel concrete arches of the railroad bridge.
- Cartersburg Road (Blake St.)...narrow county road bridge over the railroad.
- S.R. 39...narrow INDOT bridge over the railroad.
- Mackey Road...recent county road bridge over the railroad.



Cartersburg Road

All other railroad crossings are of County Roads and are at grade.

Together, the Creek and the CSX Railroad tracks provide barriers to development and travel.



Twin Bridges railroad bridge

Within the Town, the narrow street rights-of-way restrict the lengths of curb radii at most intersections. Curb corner radii at various intersections along U.S. 36 are five feet or less and do not meet current INDOT design standards. As a result, large vehicles must often encroach upon adjoining traffic lanes when turning from one street to another. The segment of U.S. 36 between old U.S. 36 and the east edge of the Town grid street system is a two lane sub-standard section. The segment is about 4600 feet in length and abuts the south edge of Ellis Park. The roadway is notched into a hillside and this configuration leaves no room for sidewalks or proper drainage.

Parking has been restricted along one or both sides of some residential streets to improve traffic safety. However, some parking is provided for the convenience of adjoining residences.

The narrow street rights-of-way and the land use characteristics provide little opportunity to add traffic capacity to the existing system.

Sidewalks are provided throughout the original Town but are either lacking or inadequate in other parts of the Town. Better linkages for pedestrians and bicyclists between neighborhoods, schools, parks and businesses are needed to improve the safety of non-motorists and to encourage alternative modes of travel within the community.



West side of Courthouse Square

3.7 Topics of Interest to Local Citizens and Elected Officials

Matters of local interest are expressed in the Danville Comprehensive Plan adopted in 1998.

These matters include:



Courthouse Square streetscape

Traffic Congestion

- Reduce congestion on U.S. 36 through Town;
- Explore east/west alternatives to U.S. 36; and
- Resolve parking problems in the downtown.

Growth Management

- Preserve Danville's small Town and rural character;
- Promote efficient land use patterns that discourage sprawl;
- Discourage development in areas where it would lead to additional traffic congestion; and
- Preserve attractive visual corridors and areas of open space within new development in order to maintain the look of a small Town.

Development of Businesses – Commercial and Industrial

- Redevelop the downtown as a destination for residents and visitors alike;

- Provide programs and incentives for improvements to downtown buildings and their facades;
- Recruit and develop new businesses, both in the downtown and in surrounding areas;
- Encourage a variety of levels of commercial development, including neighborhood commercial; and
- Encourage new industrial development.

Sidewalks and Linkages

- Link parks, neighborhoods, and other key community locations;
- Provide safe paths and crossings for pedestrians at intersections with vehicular traffic;
- Improve sidewalks in areas in which they are inadequate;
- Provide pedestrian access to businesses; and
- Improve gateways into and throughout the community, thus linking locations visually as well as physically.

3.8 Legislative Policies and Mandates

The Danville Comprehensive Plan, adopted by the Town Council in September of 1998, establishes a “Community Vision” which includes the transportation goals of :

- Reducing congestion on U.S. 36 through Town;

- Exploring east-west alternatives to U.S. 36; and
- Resolving parking problems in the downtown.

The Plan further states that a “bypass corridor feasibility study” be prepared.

3.9 Economic Initiatives

The Hendricks County Economic Development Partnership and the Danville Chamber of Commerce are each concerned with economic development in the Study Area.

The Chamber is particularly concerned about maintaining the vitality of the central business district. In that regard, traffic congestion, parking supply, and the size and frequency of trucks passing through the central business district are a concern. The Chamber and historic preservationists also encourage owners to preserve the architectural characteristics of the downtown buildings.

The Chamber and the Partnership are promoting commercial/industrial development in the eastern part of Danville, both north and south of U.S. 36 west of C.R. 200 E. as shown by the Land Use Plan, Figure 5. The area north of U.S. 36, Danridge, is the site of the Danville Post Office and has been zoned for a mixture of light industrial and commercial uses.



Commercial Building on the north side of
U.S. 36

The area south of U.S. 36 is adjacent to the CSX Railroad along its north side, and the Hendricks County Airport along its east side. This area is targeted for industrial development that could take advantage of railroad, airport, and highway access.

The Hendricks County Hospital, other health care providers, and County government are the largest employers in the Study Area. As such, these entities attract employees and users of their services from throughout the County and beyond.

3.10 Intermodal Relationships

There are four significant intermodal issues to consider in this study area:

- CSX Railroad
- Hendricks County Airport
- Twin Bridges Landfill
- Pipelines

These features are shown on Figure 8.

CSX Railroad

CSX operates a very active major mainline service through the study area radiating from Indianapolis, running parallel to and south of US 36. A large rail yard in Avon (8 miles east of Danville) is used to organize rail cars into trains. A pair of mainline tracks extends westward from the Avon yard through the study area towards St. Louis.



CSX Railroad along the south edge of Danville



Hendricks County Airport

The pair of CSX tracks through the study area act as a barrier to north-south vehicular travel and as a constraint to the expansion of Danville toward the south. There are few roadways that cross the railroad, some of which are at grade and others of which are separated by bridges of historic interest.

Spurs from the mainline provide rail car service to several businesses in the study area.

Hendricks County Airport

The Indianapolis Airport Authority operates a general aviation airport within the study area. The airport has a single north-south runway, taxiways, and hangars. The runway is between and parallel to C.R. 225 E and C.R. 300 E and immediately south of the CSX Railroad and U.S. 36. Extensions of the runway will eventually require that C.R. 150 S be vacated west of C.R. 300 E.



Twin Bridges Landfill

Twin Bridges Landfill

The Twin Bridges Landfill is privately operated and occupies an area southeast of Danville between the West Fork of White Lick Creek and C.R. 150 E.

The facility receives about one million tons of waste from throughout Indiana each year. About three-quarters of the tonnage comes from Hendricks and its three neighboring counties within the Indianapolis urban area, as shown by Table 5.

Table 5.
Twin Bridges Landfill Activity

County of Origin	Tons Received at Twin Bridges			
	1999		2000	
Marion (Indianapolis)	345,255	(34.0%)	240,019	(28.8%)
Boone	147,108	(14.5%)	170,854	(20.5%)
Hamilton	116,513	(11.5%)	113,407	(13.6%)
Hendricks	118,009	(11.6%)	119,185	(14.3%)
All other	287,936	(28.4%)	188,968	(22.8%)
<i>Total</i>	<i>1,014,911</i>	<i>(100%)</i>	<i>832,433</i>	<i>(100.0%)</i>

*source: Solid Waste Facility Profiles, Indiana Department of Environmental Management, 1999 and 2000

Two types of trucks haul waste to Twin Bridges:

Packer Trucks

These are single-unit type trucks that pick up waste along local routes. They may haul 15,000 to 20,000 pounds, depending on the density of packed waste. Some deliver directly to the landfill site while others deliver to transfer stations. Most of these trucks arrive at Twin Bridges from within Hendricks County and from Marion County



Trash Hauler on U.S. 36

Hauler Trucks

These are semi-trailer types of trucks that pick up waste at transfer stations and haul to landfill sites. They haul 45,000 to 80,000 pounds, depending on the density of packed waste. Most of the trucks haul waste to Twin Bridges from transfer stations located in other counties.

The site operates 12 hours per day during weekdays and half-days on Saturdays. Typically,

between 300 and 400 trucks use the facility each weekday, fewer on a Saturday.

Based on the tonnages and truck types, it is estimated that about 61,500 packer truckloads per year are delivered to the site from Hendricks and Marion Counties, and that about 21,500 hauler truckloads are received from elsewhere, for a total of about 83,000 truckloads per year.



Twin Bridges Road serving landfill

About half of these trucks have origins and destinations (O&D's) to the east along U.S. 36. The balance have O&D's approximately equally split to the north (along S.R. 39), south (along S.R. 39), and west (along U.S. 36).

The latter trips must all pass through the Danville Central Business District and its Courthouse Square en route to and from the Twin Bridges Landfill.

The landfill will be active until 2020 or 2025, based on the current activity and available land. As areas of the landfill are completed, they are being restored for recreational purposes. Soccer fields and picnic areas have been constructed in some of these areas.

Pipelines

Two major interstate pipelines transport petroleum products or natural gas through the study area and cross beneath the U.S. 36 corridor. One of these pipelines crosses the Twin Bridges Landfill site and will limit the extent of the area that it can use. The

other pipeline crosses the airport property and limits the length of the north-south runway. Both pipelines cross beneath CSX Railroad and US 36 near the east edge of the study area.

3.11 Congestion Management System Status

The Study Area is west of and beyond the current limits of the Indianapolis Metropolitan Planning Organization (MPO). The MPO has actively implemented congestion management techniques and projects using Federal Congestion Management / Air Quality (CMAQ) funds.

The Study Area will soon become a part of the MPO however. The year 2000 U.S. Census data revealed that there is now sufficient population density contiguous to the MPO area.

3.12 NWI Wetlands



Wetland Area

The National Wetlands Inventory (NWI) of the U.S. Fish and Wildlife Service produces information on the characteristics, extent and status of the Nation's wetlands and deepwater habitats. The Emergency Wetland Resources Act of 1986 directs the Service to map the wetlands of the United States.

The NWI map for the U.S. 36 Corridor Study Area is shown by Figure 8. Much of the wetland areas are located along the various creeks that flow through the area from north to south. Other wetlands are associated with natural or man-made

ponds that are scattered throughout the agricultural areas. Other smaller wetlands may or may not have been identified and mapped by the NWI.

3.13 Floodplains, Streams and Rivers



White Lick Creek

The West Fork of White Lick Creek flows from north to south through Hendricks County and the Study Area, crossing the U.S. 36 corridor. It and its several tributaries serve a large watershed that includes most of the Town of Danville as shown by Figure 8.

The Town has its sewage treatment plant along the west bank of the creek, south of its intersection with U.S. 36. Its water treatment plant is upstream to the north of U.S. 36.

The stream itself is scenic and its floodplain is broad. Wetland areas and farm ponds are evident throughout the floodplain corridor. Vegetation along the creek is healthy and dense in many places. The Town of Danville's Ellis Park is along the west side of the creek and extends north from U.S. 36 to Columbia Street. It is an active park with playground, playfield, swimming pool, picnic, and amphitheater areas.

The 53-acre Blanton Woods Nature Park straddles White Lick Creek and has several hiking trails for nature enthusiasts to observe the prairie grasses, wildflowers, and woods. The Town intends to link

Blanton Woods with Ellis Park via a trail along the creek.

The Comprehensive Plans of both the Town and the County recognize the White Lick Creek(s) as being environmentally sensitive and valuable as a scenic and recreational corridor to be protected from the adverse impacts of development.

3.14 Threatened and Endangered Species

The Indiana Department of Natural Resources each maintain lists of species that are classified as “Endangered or Threatened” under Federal Classifications, and as “Endangered, Special Concern, or Extirpated” under Indiana Classification.

The Indiana list includes a total of 169 species in the various classifications. The Federal list includes seven (7) species of birds and mammals that are endangered or threatened, and twelve (12) species of mollusks that are endangered or threatened.

No field observations have been conducted as a part of this study to determine if any of these species are present in the Study Area. However, the Indiana Bat (*Myotis Sodalis*) has been provided a protective habitat elsewhere in Hendricks County.

3.15 Historic Structures and Assessment of Archeological Potential



East side of County Courthouse

There are several structures and districts within the Study Area that are of historic interest. These are shown on Figure 8.

The Hendricks County Courthouse occupies an entire block in the central business district. The Courthouse is the center piece of the Courthouse Square Historic District. The Courthouse has been carefully restored to accommodate the courts and certain governmental offices. All four block faces across from the courthouse are also a part of the District and consist of one, two, and three story commercial and office establishments. There are 43 significant buildings within this District. Some of these buildings are original to their sites and many have been renovated. Most establishments are occupied and include restaurants, a theater, the Town Hall, various retail establishments, and several professional offices. A downtown streetscape project was recently completed using Transportation Enhancement Funds. The project included the reconstruction of sidewalks, the installation of textured crosswalks, and the replacement of street lights and traffic signals with vintage fixtures.



Danville Public Library

The Danville Public Library is located in the Washington Street Historic District on the east edge of the central business district. The library was constructed circa 1903 using a grant from the Andrew Carnegie Foundation. This “Carnegie”

library was carefully renovated and expanded in 1998. There are 21 significant buildings within this District including the County Jail and Sheriff's residence which is listed on the National Register of Historic Places. The County Jail and Sheriff's residence is now occupied by the Hendricks County Historical Society. The Society operates a small museum and provides information to citizens.

The Hendricks County Government Center occupies a former school building three blocks south of the central business district. This building was carefully restored and expanded to house many of the other offices of County government that are not located in the Courthouse.



Typical Residence in Danville

The Main Street Historic District is located west of the Courthouse District along either side of Main Street (U.S. 36) and Marion Street. There are 47 buildings of interest in this District. This District is listed on the National Register of Historic Places.

The Broadway Street Historic District is located along this street east of downtown. There are 15 buildings in this District.

The housing stock throughout "old Town" Danville is comprised of modest bungalow and craftsman style cottages, mostly one-story or one and half stories in height. They are served by a traditional grid pattern of narrow, neighborhood scale streets. Many of the houses have been restored or renovated and most are in apparent good or excellent condition.

Together, the buildings and homes contribute to an extensive community that is of historic and architectural interest and value.



Twin Bridges Road serving landfill

There are several concrete arch railroad bridges that carry the CSX Railroad over the roads and creeks of Hendricks County. These and other bridges throughout the state are listed in Artistry and Ingenuity in Artificial Stone by James L. Cooper, 1997. One such bridge is in the Study area and carries CSX's dual tracks over Twin Bridges Road and White Lick Creek (West Fork). All packer trucks and haulers traveling to and from the Twin Bridges Landfill pass beneath this bridge.

An iron truss road bridge crosses White Lick Creek near the railroad bridge. Although abandoned for use, the iron truss bridge is listed on the National Register of Historic Places.

A cemetery is located along the north side of Lincoln Street between S. Cross Street and Blake Street (Cartersburg Road). This cemetery is one of the oldest in Hendricks County.

3.16 Consulting Parties for Section 106 Review

In the National Historic Preservation Act (NHPA), Congress established a comprehensive program to preserve the historical and cultural foundations of the Nation as a living part of community life. Section 106 of NHPA is crucial to that program,

because it requires consideration of historic preservation in the multitude of Federal actions that take place nationwide. Section 106 requires Federal agencies to consider the effects of their actions on historic properties and provide the Council an opportunity to comment on Federal projects prior to implementation.

Section 106 review encourages, but does not mandate, preservation. Sometimes there is no way for a needed project to proceed without harming historic properties. Section 106 review does, however, ensure that preservation values are factored into Federal agency planning and decisions.

Regulations issued by the Advisory Council, on Historic Preservation (ACHP) guide Section 106 review, specifying actions Federal agencies must take to meet their legal obligations. The regulations are published in the Code of Federal Regulations at 36 CFR Part 800 and can be found on the Council's Web site at www.achp.gov/regs.html.

Federal agencies are responsible for initiating Section 106 review, most of which takes place between the agency and State. Appointed by the governor, the State Historic Preservation Officer (SHPO) coordinates the State's historic preservation program and consults with agencies during Section 106 review.

To successfully complete Section 106 review, Federal agencies must:

- Determine if Section 106 of NHPA applies to a given project and, if so, initiate the review;
- Gather information to decide which properties in the project area are listed on or eligible for the National Register of Historic Places;
- Determine how historic properties might be affected;
- Explore alternatives to avoid or reduce harm to historic properties.

Throughout Section 106 review, Federal agencies must consider the views of the public. This is particularly important when an agency is trying to identify historic properties that might be affected by a project and is considering ways to avoid or minimize harm.

In addition to seeking the views of the public, Federal agencies must actively consult with certain organizations and individuals during review. This interactive consultation is at the heart of Section 106 review.

The responsibility of initiating the Section 106 consultation has been delegated by the Federal Highway Administration (FHWA) to the Indiana Department of Transportation (INDOT).

The Section 106 consulting parties for this project include:

FHWA

INDOT

State Historic Preservation Officer (SHPO)

Historic Landmarks Foundation of Indiana

Hendricks County Historical Society

Hendricks County Historian

Delaware Nation, Oklahoma

Miami Tribe of Oklahoma

These consulting parties have been and will be notified at appropriate points in the study process, and be given opportunity to review information and to assist in developing and evaluating alternatives that could avoid, minimize or mitigate adverse impacts on historic properties.

3.17 Schools

The school system that serves Danville and Center Township consists of:

- High School located on a campus northwest of the intersection of Mackey Road and Lincoln Street.
- Middle School located at the northeast corner of Wayne Street and East Main Street (U.S. 36).
- North Elementary School located along S.R. 39 in the northeast part of Town.
- South Elementary School located on a campus southwest of Mackey Road and Lincoln Street.

These schools are shown on Figure 8.

Students are served by a fleet of school buses that are garaged and serviced at a facility north of

Lincoln Street within the campus area occupied by the High School.

3.18 Health and Safety Facilities

Hendricks County Hospital provides a full range of medical services and has a staff of about 250 physicians. The Hospital is located on Old U.S. 36 across from the County Fairground.

The Danville community is served by two fire stations. The original station is on the west edge of the central business district near the intersection of N. Kentucky Street and W. Main Street (U.S. 36). A newer station is located southeast of the intersection of Twin Bridges Road and U.S. 36.

U.S. 36 is an important corridor that is used by emergency vehicles to gain access to all parts of the community.

3.19 Parklands, Wildlife Lands and Nature Preserves

Parks and other features are shown on Figure 8.

Ellis Park is owned and operated by the Town of Danville. The park is located along the west side of White Lick Creek (West Fork) and extends north from U.S. 36 to Columbia Street. It is an active park with playground, swimming pool, playfield, picnic and amphitheater areas.



Ellis Park

Blanton Woods Nature Park consists of 53 acres of pristine woodland that was donated to the Town of Danville in 1993. White Lick Creek (West Fork) meanders through the park. Several hiking trails enable visitors to observe the prairie grass meadow, native wildflowers, and woods.

The Blanton House is situated on 19 acres adjoining Blanton Woods. The estate is available for rent as a conference center and retreat.

The Town intends to link Blanton Woods / Blanton House with Ellis Park via a trail along the creek.

Twin Bridges Golf Club is located south of the CSX Railroad and west of White Lick Creek (West Fork) along Cartersburg Road. The course is one of 27 Audubon Society “signature” courses in the United States, awarded for the preservation of natural habitats.

Together, Blanton House, Blanton Woods, Ellis Park, and Twin Bridges Golf Club (all located near White Lick Creek) provide habitats for a variety of wildlife that is native to central Indiana.

The Hendricks County fairground is located in the eastern part of Danville between Old U.S. 36 and U.S. 36. The facility is used year round for meetings of various groups and as offices for agricultural agencies. The annual County Fair is conducted at this site.

3.20 Environmental Justice Concerns

Environmental justice is concerned with ensuring that people of all races, cultures, and incomes receive fair treatment in the development of environmental laws, regulations, and policies. This movement stems from the concern that minority populations and/or low-income populations bear a disproportionate amount of adverse health and environmental effects. An executive order was passed in 1994 to focus attention on these issues.

The year 2000 Census data is summarized in Table 6. Tract number 2105 includes all of Center Township, encompassing the Study Area.

Hendricks County was ranked second in the State of Indiana for its median household income level (computed in 1998). Conversely, it was ranked 91st (out of 92 counties) for its poverty rate in the same year.

The statistics indicate a rather homogenous community with a high percentage of home-ownership, moderate to high levels of income, and a low percentage of non-white residents.

There are no apparent concentrations of minority or low income populations.

Table 6.
Year 2000 Census Data

Tract	Pop	Pop in Group Quarters	HH	Pop/HH	Owned	Rented	Vacant	Mean Income *	Median Income **	% Pop Non-White
2101.01	8,142	17	2,718	2.99	2612	106	66	\$58,305	\$53,582	2.8
2101.02	7,823	96	2,702	2.86	2516	186	85	\$46,706	\$43,474	3.6
2102	11,144	178	4,248	2.58	3199	1,049	166	\$42,895	\$37,988	3.0
2103	4,657	0	1,684	2.77	1463	221	48	\$43,955	\$40,181	1.8
2104	4,888	0	1,786	2.74	1516	270	74	\$39,822	\$37,197	1.6
2105	9,744	361	3,508	2.67	2740	768	194	\$42,702	\$37,198	2.3
2106.01	14,432	0	5,173	2.79	4490	683	561	\$46,354	\$42,460	4.5
2106.02	17,734	352	6,192	2.81	5381	811	327	\$56,345	\$46,409	4.2
2107 ***	6,047	2,206	1,495	2.57	1384	111	38	\$48,620	\$46,179	16.7
2108	7,333	0	3,033	2.42	2050	983	168	\$41,554	\$36,971	3.2
2109	3,668	0	1,619	2.26	882	737	102	\$27,825	\$24,231	3.0
2110	5,072	0	1,855	2.73	1638	217	63	\$40,147	\$36,599	1.8
2111	3,409	0	1,262	2.70	1065	197	62	\$34,875	\$31,000	1.4
County	104,093	3,210	37,275	2.71	30,936	6,339	1,954	\$44,539	\$39,892	4.0

* U.S. Census 2000 income topics for sub-county geographic units not released as of 8/22/02.

Mean Household Income calculated from 1989 Aggregate Income and 1990 Households.

** U.S. Census 2000 income topics for sub-county geographic units not released as of 8/22/02.

Median Household Income from U.S. Census 1990 using 1989 data.

Comparative Hendricks County Median Household Income	1989	\$39,892
		1993	\$52,470
		1998	\$58,323
		2000	\$55,208

Census Tract 2107 includes the Indiana Boys' School, a correctional facility for juvenile *** offenders.

3.21 Clean Air Act Conformity Status

The Study Area is west of and beyond the current limits of the Indianapolis Metropolitan Planning Organization (MPO). The MPO is concerned with monitoring air quality within its area.

The Study Area will soon become a part of the MPO, however. The year 2000 U.S. Census data revealed that there is now sufficient population density contiguous to the MPO area.

3.22 Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and Other Potentially Hazardous Sites



Twin Bridges Landfill

The Twin Bridges Landfill is discussed in Section 3.10. The facility occupies a large area southeast of Danville between the West Fork of White Lick Creek and C.R. 150 E. The landfill receives about 1 million tons of material each year. The landfill will be active until 2020 or 2025 based on current activity and available land.

The landfill is being constructed according to strict standards enforced by the Indiana Department of Environmental Management. The construction standards are to ensure that the byproducts of decomposition (liquid leachate and methane gases) are contained within the site or otherwise treated. The landfill consists of individual cells that are sealed and capped according to these standards.

The adaptive reuses of the completed landfill area are limited to activities or facilities that do not penetrate the capped seal and that do not have excessive load bearing requirements.

As areas of the Twin Bridges landfill are completed, they are being restored for recreational purposes.

Soccer fields and picnic areas have been constructed in some of these areas.

Other potentially hazardous sites may be located within or adjacent to the CSX Railroad where bulk chemicals are stored or transferred. Pipelines, discussed in Section 3.7, are also potentially hazardous if disturbed.

4.0 Evaluation Criteria

Various roadway alignment alternatives within the U.S. 36 corridor will be evaluated with respect to the core objectives using these criteria:

- Provide additional system capacity to accommodate the traffic demands of projected (20 year) development patterns as measured by:
 - Peak hour level of Service C or better in rural areas.
 - Peak hour level of Service D or better through Town.
- Provide additional system flexibility (redundancy) as measured by:
 - Availability of alternate travel routes
 - Amount of through trip diversion

5.0 Preliminary Alternatives

The following range of Preliminary Alternatives, shown by Figure 9, will be subjected to the previously described evaluation criteria.



U.S. 36 looking west to Danville

Do-Nothing

The “do-nothing” alternative will evaluate the consequences of doing no roadway improvements along the U.S. 36 corridor.

Traffic Operational Improvements

This alternative will consider operational measures to increase capacity along the U.S. 36 corridor that require little or no right-of-way. Such improvements may include:

- pavement markings to provide auxiliary turn lanes;
- curb radii improvements at intersections;
- traffic signal system enhancements;
- one-way streets
- parking restrictions.

Major constraints and concerns are the impacts on adjacent historic districts and properties, and the vitality of the central business district.

Northern Bypass

This alternative will consider roadway alignments along new or existing rights-of-way that would bypass the Town around the north side.

Major concerns are the impacts on sensitive environmental areas along White Lick Creek, the affects on development patterns, and the avoidance of park lands.

Southern Bypass

This alternative will consider roadway alignments along new or existing rights-of-way that would bypass the Town around the south side.

Major concerns are the crossing of the CSX Railroad tracks, the avoidance of the landfill, golf course, and airport, and the sensitive White Lick Creek.



White Lick Creek

Railroad Corridor

This alternative will consider a roadway alignment along new right-of-way adjacent to the north edge of the CSX Railroad right-of-way.

Major concerns are the displacement of certain business and residential structures, topography, and the crossing of White Lick Creek.

County Roads

This alternative will consider improvements to County roads that form a perimeter around Danville.

Major concerns are the number of adjacent homes and properties that abut these roads and the amount of additional right-of-way that would be required to improve the roads.

Appendix